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United States Patent [19]

Nishida

[11] **Patent Number:** 5,313,528[45] **Date of Patent:** May 17, 1994**[54] METHOD FOR EXTRACTING FEATURES FROM ON-LINE HANDWRITTEN CHARACTERS****[75] Inventor:** Hirobumi Nishida, Sagamihara, Japan**[73] Assignee:** Ricoh Company, Ltd., Tokyo, Japan**[21] Appl. No.:** 797,051**[22] Filed:** Nov. 25, 1991**[30] Foreign Application Priority Data**

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[51] Int. Cl.⁵ G06K 9/46; G06K 9/50**[52] U.S. Cl.** 382/23; 382/16; 382/24**[58] Field of Search** 382/13, 16, 19, 20, 382/21, 23, 24, 36**[56] References Cited****U.S. PATENT DOCUMENTS**

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A method provides for extracting features from a handwritten character which is input to an on-line input device. The on-line input device successively outputs stroke information indicating points on strokes of the handwritten character. The method includes a first step of detecting strokes of the handwritten character based on the stroke information. Thereafter, singular points are detected, based on the stroke information. Each of the singular points is defined as a pair of points on the strokes of the handwritten character which are written at different times but have substantially the same coordinates. Then, primitive sequences forming each of the strokes are obtained, and a connective relationship between each two formative sequences of each of the strokes is determined. Finally, the structure of each of the singular points is determined.

4 Claims, 12 Drawing Sheets